

A GUIDE
TO THE
GRANT AND AWARD PROGRAMS
OF THE
NATIONAL INSTITUTES OF HEALTH

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health
Division of Research Grants
Bethesda, Maryland 20014

DISCRIMINATION PROHIBITED

Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Therefore, the grant and award programs of the National Institutes of Health, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

Foreword

The National Institutes of Health, in its mission to improve the health of the American people, supports about 36 percent of the total national research effort in the health and health-related sciences, and 55 percent of all Federal support of research in these sciences. This significant contribution to the national attack on diseases that jeopardize the health of millions of people every year is made principally through broad support of research and research training in academic and other nonprofit research institutions, through programs to expand and develop the Nation's health manpower, and through biomedical communications.

As a result of growth in the health sciences, the range of diagnostic, therapeutic, and preventive capability available for medical and health services has been increased markedly; the prognostic expectancy in cancer, heart conditions, cerebrovascular diseases, infectious diseases, mental illness, and many other diseases has been altered; and insights have been opened into the nature of life, the functioning of biological systems, the character of disease, degenerative processes, and the conditions of health—insights which provide the basis for the further advance of medical science and practice.

Yet even as we have advanced, new problems have become intensified and await solution. The nature of the problems and the demand they place upon the further advance of knowledge and technical capability will exert a major influence on the course of biomedical research.

The National Institutes of Health through its grant and award programs continues to seek solutions to health problems, to increase the supply of health manpower, to improve the Nation's medical research and teaching facilities and resources, and thus further the advancement of medical science in fulfillment of its mission to improve the health of mankind.

The character and scope of the research, research facilities and resources, research training, health education and biomedical communications programs, are presented in this brochure for the information of the scientific community and interested members of the general public, and as an aid to the potential applicant.

R. W. LAMONT-HAVERS, M.D.

Associate Director for Extramural Research and Training

March, 1970

Contents

	<i>Page</i>
FOREWORD	iii
I. PROJECT GRANTS	1
A. Health Research	1
B. Health Service	2
1. Nursing	2
2. Dental	3
C. Medical Library	3
1. Research and Development	3
2. Special Scientific Projects	4
II. TRAINING PROGRAMS	5
A. Research Training	5
1. Grants	5
a. Dental Health	6
b. Nursing	6
2. Fellowships	6
a. Predoctoral	7
b. Postdoctoral	7
c. Special	8
(1) Dental Public Health Research	8
(2) Nursing Research	9
3. Research Career Development Awards	9
4. International Postdoctoral Fellowships	10
B. Health Service Training	11
1. Public Health Training Grants	11
2. Traineeships for Professional Public Health Personnel ..	11
3. Advanced Traineeships for Allied Health Personnel	11
4. Professional Nurse Traineeships	11
5. Student Loans and Scholarships	12
6. Cuban Refugee Program	12
C. Health Professions Educational Improvement	13
1. Institutional and Special Project Grants	13
2. Schools of Public Health	13
3. Graduate Training in Public Health	14
4. Continuing Dental Education	14
5. Dental Auxiliary Utilization	14

	Page
6. Allied Health Professions Grants -----	14
7. Improvement of Nurse Training -----	15
D. Medical Library Training -----	16
1. Grants -----	16
2. Fellowships -----	16
III. RESOURCES -----	19
A. Research -----	19
1. General Research Support -----	19
Biomedical Sciences Support -----	19
Health Sciences Advancement Awards -----	19
2. Clinical Research Center Grants -----	20
3. Animal Resources -----	21
4. Special Research Resources -----	21
B. Medical Library -----	22
1. Resource Grants for Health Libraries -----	22
2. Regional Medical Library Program -----	22
3. Biomedical Publications Grants -----	24
IV. FACILITIES -----	25
A. Health Research Facilities -----	25
B. Health Professions Education Facilities -----	25
C. Medical Library Construction -----	26
APPENDIX A—Biomedical Research Areas Supported by the Na- tional Institutes of Health -----	27
APPENDIX B—Where to Write for More Detailed Information and Application Forms -----	33

I. Project Grants

A. Health Research

NATURE AND PURPOSE

Project grants make up the largest category of support offered by the National Institutes of Health. Their purpose is to encourage and support research in all fields related to public health—a range covering medicine, biology, dental health, human development, and many activities in the environmental health sciences. Research grants provide funds for salaries, equipment, supplies, travel, and other expenses, and afford the collateral benefits of enriching the training and experience of research workers. They are awarded to universities, colleges, medical schools, hospitals, and other institutions sponsoring research in the sciences related to health.

NIH research grants fall into two categories. *Project* grants are awarded to an institution in the name of a principal investigator for a discrete project representing an investigator's interests and competence. *Program-project* grants are awarded to an institution in the name of one or more senior investigators with demonstrated competence for a broadly-based and usually long-term research program directed toward a range of problems with a central research focus.

ELIGIBILITY REQUIREMENTS

Any qualified scientist is eligible to apply for research grant support if his institution is willing to sponsor his application, provide facilities necessary to accomplish his research goals, and accept full responsibility for judicial use and accounting of grant funds if awarded.

If the investigator is a foreign national working in a U.S. institution, he must also be able to produce evidence that his visa status will permit him to remain in the United States long enough to complete the research he proposes to conduct.

Proposals in basic, clinical, and applied research on the causes, diagnosis, prevention and cure of diseases of man, including the biological effects of environmental contaminants on the processes of growth and development, and in related sciences, are eligible for support, with the following exceptions:

- request for support of clinical work with a limited research component;
- requests for funds for equipment, or for alteration or renovation of laboratory space, when not related to a specific project;
- requests for grants exclusively for travel to meetings or conferences, except from professional societies or similar responsible organizations.

Although there is no precise limitation on the number or dollar value of research grants that may be awarded to any one institution or in behalf of any one investigator, the ability of the scientist to devote adequate time to the project, whether or not his salary comes from the grant, is an important factor in the review of the application.

Applicants must provide detailed information to support their proposals, including the nature of the research plan; general objectives and specific aims of the proposal, methods of procedure, and significance of the proposed research; available facilities; previous work done by the investigator; pertinent personal publications; results obtained by others; biographical sketches of principal investigator and professional assistants; and budget estimate. Although applications may be submitted at any time, the deadline for review by the March council is October 1; June council, February 1; and November council, June 1. The earliest beginning dates for approved applications would be May 1, September 1, and January 1, respectively.

Research Projects Abroad

Criteria for support of projects in institutions in countries other than the United States and its territories are stringent. For example, in addition to the criteria governing the review of domestic applications, foreign applicants must be able to demonstrate, and the reviewing groups be satisfied, that:

- the results of the proposed research project are likely to advance significantly the health sciences in both the United States and the country of the applicant;
- the proposal is outstanding or original in concept;
- the research must be conducted outside the United States because of unusual personnel or material resources available;
- the proposal constitutes a timely research opportunity that would be lost if not supported at this time;
- research of the nature proposed is not being conducted in the United States.

B. Health Service

1. Nursing

NATURE AND PURPOSE

Nursing research project grants are designed to improve nursing practice through scientific investigation of the many unknown factors that limit progress in patient care. Through this program, researchers in the nursing field investigate areas that will lead to new knowledge of importance in the improvement of nursing care for patients, including the clinical nursing care of specific groups of patients, nursing education, nursing as an occupation, the organization and delivery of nursing services, and ways of communicating and applying research findings.

ELIGIBILITY REQUIREMENTS

Investigators in nursing studies, including nurses, physicians, behavioral and biological scientists, economists, industrial engineers, and hospital administrators, may apply.

2. Dental

NATURE AND PURPOSE

Research project grants in the field of dental health provide support for research activities designed to establish dental health services, or to develop information or methods relating to the supply and distribution of dental manpower, for the control or prevention of dental diseases and disorders, or for the administration and delivery of dental health services.

Grants are also awarded to increase the supply of dental and allied manpower, improve educational facilities and programs for dental personnel, and develop further their efficient utilization and productivity. Other objectives of such grants may be to extend dental services to more people, develop financial mechanisms which satisfactorily pay for services delivered, and ensure high quality of dental care; and for the prevention and treatment of oral diseases and disorders through widespread acceptance and use of the latest dental technology in clinical practice, dental health education, and public health measures.

ELIGIBILITY REQUIREMENTS

Institutions having dental care programs; universities and colleges, and their professional schools; State and local health and health-related agencies; and individuals are eligible to apply for grant support.

C. Medical Library

1. Research and Development

NATURE AND PURPOSE

Section 396 of the Medical Library Assistance Act, "Research and Development in Medical Library Science and Related Fields," authorizes grants-in-aid and contracts to carry out projects of research and investigations in health library science and health communications fields to create, develop or adapt new techniques, systems and equipment, for processing, storing, retrieving and distributing information pertaining to the sciences related to health. This program seeks to improve biomedical communications through support of approved research projects to develop new health information tools and technology, studies of health information needs and patterns of information use, and health library services and systems development. Studies in the historical development of the life sciences are also eligible for support.

ELIGIBILITY REQUIREMENTS

Individuals and appropriate nonprofit institutions are eligible to apply.

2. Special Scientific Projects

NATURE AND PURPOSE

Section 395 of the Medical Library Assistance Act, "Assistance to Special Scientific Projects," authorizes grants to support senior scientists and health professionals for full-time, intensive examination, evaluation and synthesis related to national health concerns such as disease, national health programs, and related social, cultural and legal factors.

Grants may be awarded to physicians and other qualified practitioners, and health-scientists for individual scholarly studies of documentation, analysis, evaluation, and synthesis of scientific, social, and cultural advances in the health sciences. The awards may provide salary, supplies, staff assistance and other necessary project costs to enable recipients to undertake such studies, including literature review and other necessary research. A project such as a manuscript is required at the completion of each project supported.

ELIGIBILITY REQUIREMENTS

Awards are made directly to candidates with outstanding scholarly achievement and recognition and who are citizens or permanent residents of the United States.

II. Training Programs

A. Research Training

1. Grants

NATURE AND PURPOSE

National progress in the improvement of health through scientific research is dependent upon an adequate and continuous supply of well-trained research scientists. The National Institutes of Health, therefore, has for more than two decades supported training programs in eligible scientific research institutions to enable them to develop, expand, and improve training programs in the health-related sciences.

Training grants are awarded to institutions having the necessary facilities and faculty to provide research training programs in scientific specialties. Grant funds may be used for equipment, personnel, stipends, and other costs incurred to expand or improve an existing program or to establish a new program.

Grants funds may not be used (a) for the support of any trainee for whom a statement of appointment has not been submitted to the awarding unit; (b) for the support of any trainee who would not in the judgment of the program director be able to use the training or meet the institution's minimum qualifications for the training involved in the project; (c) for the continuation support of a trainee who has failed to demonstrate satisfactory participation; (d) for support of candidates for degrees of M.D., D.D.S., D.O., D.V.M., or similar degrees; or (e) for residency training, unless specifically approved and announced by the awarding unit.

ELIGIBILITY REQUIREMENTS

Only institutions with adequate facilities and faculty for conducting a research training program are eligible for support.

Individuals receiving stipend support under a training grant must be either citizens or noncitizen nationals of the United States or have been lawfully admitted to the United States for permanent residence.

The grantee institution is responsible for the selection of trainees who meet requirements set by the awarding unit and the institution.

Trainees at the *predoctoral* level must have a bachelor's degree or equivalent training. *Postdoctoral* trainees with a doctor's degree or equivalent training are eligible for support under an NIH training grant.

Applications preferably should be submitted several weeks in advance of

the following deadlines: February 1 for June council review; June 1 for November council review, and October 1 for March council review.

a. Dental Health

NATURE AND PURPOSE

Grants are awarded to establish new or augment existing training programs to increase the supply of trained research personnel for the conduct of independent research in areas related to dental health.

Graduate research training projects are supported to increase the supply of dental and allied manpower, improve educational facilities and programs for dental personnel, and develop further their efficient utilization and productivity, to improve the distribution, organization and practice of dental personnel, extend detail services to more people and ensure high quality of dental care; and to prevent and treat oral diseases and disorders through widespread acceptance and use of the latest dental technology in clinical practice, dental health education, and public health measures.

ELIGIBILITY REQUIREMENTS

Qualified graduate degree-granting institutions competent to carry out research training programs relevant to dental public health are eligible to apply.

b. Nursing

NATURE AND PURPOSE

Nurse scientist graduate training grants are awarded to expand doctoral programs in university science departments and to provide stipends to nurses preparing for research careers through full-time doctoral study in the biological, physical, or behavioral science disciplines.

ELIGIBILITY REQUIREMENTS

Graduate schools of nursing of demonstrated research accomplishment are eligible to apply.

2. Fellowships

NATURE AND PURPOSE

Research fellowships at the predoctoral and postdoctoral level are awarded to individuals through their sponsoring institutions to support full-time training for research in the health and health-related sciences. Special fellowships are awarded to afford scientists and clinicians the opportunity to broaden their scientific background, undertake basic and applied studies that will strengthen research skills, or enlarge their command of an allied research field through interdisciplinary studies. A special fellowship can also enable a person in mid-career (e.g., during a sabbatical leave) to extend his potential for research in the health-related areas. NIH research fellowships are not awarded for training leading to the M.D., D.D.S., D.V.M., D.O., or other applied science degrees.

Fellowships may not be retained concurrently with another award (fellow-

ship, assistantship, scholarship, or similar award) which provides a stipend or otherwise duplicates the provisions of the NIH award. Fellows may, on the other hand, receive concurrent educational remuneration from the Veterans Administration, and accept loans from the Federal Government.

ELIGIBILITY REQUIREMENTS

All applicants for research fellowships from the NIH must be citizens or noncitizen nationals of the United States, or have been lawfully admitted to the United States for permanent residence. Cuban refugees are exempt from the U.S. citizenship requirement.

Individuals on temporary visas (students, etc.) are not eligible to apply. Applicants are required to sign a statement of allegiance to the United States.

Deadlines for receipt of applications for research fellowships are October 1, January 2, or April 1 for announcement in the following February, June, or September, respectively.

a. Predoctoral

Predoctoral fellowships are awarded to individuals who, by the beginning date of the proposed fellowship, have a baccalaureate degree or equivalent experience, and who are enrolled in a graduate degree program in an eligible institution in the United States. Prior to formal application, an applicant must arrange for a training program in the institution and a sponsor who will supervise his training. College seniors, on the other hand, may apply without formal acceptance by a graduate school or a sponsor, but such applications are acceptable only for the January 2 or April 1 deadlines. Awards are made for 1 year, with additional support dependent on satisfactory progress and available funds.

A factor in determining taxability of awards is that a fellowship is regarded as an educational benefit and does not require the performance of services for the National Institutes of Health. No deductions are made from stipends for any purpose, such as income tax or social security.

The NIH will not intercede on behalf of an individual in relation to his compulsory military service, but the awarding unit will provide, upon request, a statement verifying the period of an award.

b. Postdoctoral

Postdoctoral fellowships are awarded to individuals who at the beginning date of the proposed fellowship have a Ph.D., M.D., D.D.S., D.V.M., Sc.D., Eng., D.O., or equivalent domestic or foreign degree. Prior to formal application, an applicant must arrange for admission to an appropriate institution and acceptance by a sponsor who will supervise his training. Fellows may be sponsored by a domestic or foreign institution that has the staff and facilities suitable to provide the proposed research training. An applicant proposing study at an institution outside the United States must present a detailed description of the unique aspects of the research facilities in terms of research goals and why the training is of such nature and caliber that it cannot be obtained in the United States.

Although an award is made for only a 12-month period, assurance may be given for up to 2 additional years of support, provided that the Fellow is making satisfactory progress and that funds are available.

c. Special

Special fellowship applicants may request support, depending upon individual needs, for periods normally ranging from 6 months to 1, 2, 3 years or, where applicable, to completion of graduate degree.

Applicants for special fellowships must have either a doctorate or equivalent degree and at least 3 subsequent years of relevant research or professional experience, or have completed residency requirements in a medical specialty, or have otherwise demonstrated to the NIH sufficient competence in their field to pursue the proposed training program, or have graduated from a school of nursing and, for professional nurse applicants, have a baccalaureate degree.

Special Fellows may be sponsored by an eligible domestic or foreign institution that has the staff and facilities suitable for the proposed research training. Special Fellows may utilize some of their time in academic studies and clinical duties if such work is closely related to their research training.

(1) Dental Health

NATURE AND PURPOSE

Fellowships are awarded at the predoctoral, postdoctoral, and special levels to provide training opportunities for research careers in dental public health, and to raise the level of competence and increase the number of individuals qualified to undertake dental public health research.

ELIGIBILITY REQUIREMENTS

Predocutorial fellowships are awarded to qualified persons holding a bachelor's degree or having equivalent training, and who, prior to formal application, have arranged for admission to an appropriate institution and acceptance by a sponsor who will supervise their training.

Postdoctoral fellowships are awarded to qualified persons holding a D.D.S., Ph.D., D.Sc., or equivalent degree. Postdoctoral fellows may undertake their training in any qualified nonprofit institution in the United States, including governmental institutions.

Special research fellowships are awarded to persons who have had at least 3 years of relevant research or professional experience after receipt of the doctoral degree, and those who, although not possessing a doctoral or equivalent degree, have demonstrated high ability in research and need special training not met by other fellowship programs. Special research fellows may undertake their training in any qualified institution in the United States, including governmental ones. They may study abroad when satisfactory evidence is furnished that training suited to their purpose is best obtained abroad.

All fellowship applicants must be citizens or nationals of the United States or have been lawfully admitted to the United States for permanent residence. Fellowships are not awarded for training leading to such professional degrees as M.D., D.D.S., and D.V.M.

(2) Nursing Research

NATURE AND PURPOSE

Special predoctoral and postdoctoral fellowships are awarded to professional nurses—men and women—in full-time graduate study to prepare for research careers in nursing or in such health-related fields as anatomy, anthropology, biochemistry, biostatistics, endocrinology, human development, microbiology, and psychology.

ELIGIBILITY REQUIREMENTS

The academic requirements for a predoctoral fellowship are a baccalaureate degree and graduation from a school of nursing. Postdoctoral fellowships are available to nurses who have earned Ph.D., Ed.D., D.Sc., or equivalent degrees.

Fellowship applicants must be citizens of the United States or have been lawfully admitted for permanent residence.

Prior to submitting an application, each fellowship applicant must arrange for admission to an appropriate training institution and for a sponsor to supervise the projected course of training.

3. Research Career Development Awards

NATURE AND PURPOSE

Research career development awards are made to research and academic institutions on behalf of qualified candidates. The purpose of these awards is to foster the development of young scientists with outstanding research potential for careers of independent research in the sciences related to health.

Awards are made for an initial period of 5 years, with the possibility of renewal for up to 3 additional years, to a maximum of 8 years.

ELIGIBILITY REQUIREMENTS

The institutions are responsible for nominating candidates who qualify for support under this program.

These candidates must be less than 40 years old on the day the application for the initial award is received by the National Institutes of Health, and have had 3 or more years of relevant postdoctoral experience. Awards will not be continued or renewed beyond the award year in which the awardee reaches his 45th birthday.

Only citizens or noncitizen nationals of the United States, its possessions or territories, or those who at least one year prior to signing the application for an award have been lawfully admitted to the United States for permanent residence are eligible to apply. Awards to noncitizens will not be renewed beyond the initial 5 years unless they have become U.S. citizens.

Applications for research career development awards may be submitted at any time. Deadlines for receipt of applications are September 1 for spring review, December 1 for summer review and May 1 for fall review. Approved applicants are notified in April, July, and December respectively.

4. International Postdoctoral Fellowships

NATURE AND PURPOSE

A limited number of international postdoctoral research fellowships are awarded annually to promising young biomedical scientists in the formative stages of their careers to provide them with the opportunity to acquire specialized research training in the United States. The fellowships are designed to serve two important domestic purposes: (1) to facilitate an interchange of knowledge between American and foreign scientists, and (2) to encourage and assist foreign investigators to engage in research on problems of importance to the health of the American people.

Funds are awarded to the Fellow to meet stipends, training expenses, and dependency and travel allowances through the non-Federal laboratory or training institution of his choosing. The institution is held responsible for administration of these funds. Fellows at laboratories of the U.S. Government receive payment directly from the National Institutes of Health.

ELIGIBILITY REQUIREMENTS

International postdoctoral research fellowships are available to nonimmigrant aliens holding an earned doctorate in a health science field. Only those scientists endorsed by nominating committees in participating countries may be considered for these awards. Additional requirements include proficiency in the English language; evidence of aptitude in basic science or clinical research, and plans to pursue a research or related career; presentation of a meritorious research proposal; and freedom from significant disease or disability.

Fellows must agree to return to their own countries at the end of their fellowship periods.

Since these awards are not intended to support formal candidacy for a degree, participation by a Fellow in teaching or academic course work is not encouraged unless prescribed by the preceptor as an integral and necessary part of the training plan. Fellows in clinical areas are expected to spend most of their time in research and to confine their clinical duties to those which are a part of their research training. Fellows in clinical research that will require professional responsibility for care and treatment of human patients should be certified by the Educational Council for Foreign Medical Graduates prior to leaving their home country.

Every effort is made to protect the scientific freedom of the international Fellow. A Fellow is free to change the details of his proposed training in whatever manner he and his preceptor deem advantageous, but he is expected to pursue the general objectives of the training plan described in the fellowship application.

B. Health Service Training

1. Public Health Training Grants

NATURE AND PURPOSE

Public health training grants are designed to increase the supply of qualified public health manpower, to expand or strengthen graduate or specialized training in public health, and to provide comprehensive professional training, specialized consultative services, and technical assistance in the field of public health, and in the administration of State or local public health programs.

ELIGIBILITY REQUIREMENTS

Schools of public health and other institutions providing graduate or specialized training in public health are eligible to apply.

2. Traineeships for Professional Public Health Personnel

NATURE AND PURPOSE

Traineeships for professional public health personnel are awarded to institutions and directly to individuals to provide support for students while they are pursuing graduate training in public health.

ELIGIBILITY REQUIREMENTS

Students pursuing graduate study in public health and preparing for careers in public health and public health teaching are eligible to apply.

3. Advanced Traineeships for Allied Health Personnel

NATURE AND PURPOSE

Advanced traineeships provide support for allied health professions personnel to become teachers, administrators, supervisors, or specialists.

ELIGIBILITY REQUIREMENTS

Trainees must have completed basic professional preparation required for employment in one of the designated eligible disciplines stated above.

4. Professional Nurse Traineeships

NATURE AND PURPOSE

Professional nurse traineeships are awarded to prepare graduate nurses for positions as administrators, supervisors, nursing specialists, and teachers in hospitals and related institutions, public health agencies, and schools of nursing. Traineeships may be for long-term, full-time academic study at baccalaureate or graduate levels, or for short-term intensive training sponsored by educational organizations and agencies approved by the National Institutes of Health.

ELIGIBILITY REQUIREMENTS

All traineeships are awarded through the institutions, organizations, and agencies participating in the traineeship program.

To be eligible for a professional nurse traineeship, a nurse must be a

graduate of a State-approved school of nursing, be licensed to practice in a State or territory of the United States, and be either a United States citizen or have been lawfully admitted to this country for permanent residence.

5. Student Loans and Scholarships

NATURE AND PURPOSE

Assistance to students in the health professions is provided through the Health Professions Student Loan program, the Health Professions Scholarship program, the Nursing Student Loan program, and the Nursing Scholarship program. The Nursing Scholarship program replaced the Nursing Educational Opportunity Grant program, effective July 1, 1969.

The purpose of these programs is to assist students who need financial help to pursue a course of study leading to a degree of doctor of medicine, doctor of dental surgery or equivalent degree, doctor of osteopathy, doctor of optometry or equivalent degree, bachelor of science in pharmacy or equivalent degree, doctor of podiatry or equivalent degree, or doctor of veterinary medicine or equivalent degree, or to a diploma in nursing, associate degree in nursing, baccalaureate degree or equivalent degree in nursing, or graduate degree in nursing, by providing long-term, low-interest loans and by awarding scholarships to students of exceptional financial need.

Student loans are repayable over a 10-year period, plus accrued interest. Scholarships do not have to be repaid.

ELIGIBILITY REQUIREMENTS

Student applicants must be citizens or nationals of the United States or have such immigration status and personal plans as to justify the conclusion that they intend to become permanent residents of the United States; be enrolled or accepted for admission in participating schools as full-time students; and be in need of the requested assistance to pursue the full-time course of study.

6. Cuban Refugee Program

NATURE AND PURPOSE

The Health Professions Educational Assistance program for Cuban Refugees provides long-term, low-interest loans to Cuban nationals who are unable to receive support from sources within Cuba and who have insufficient resources in the United States to finance their education or retraining at a school of medicine, osteopathy, dentistry, pharmacy, podiatry, optometry, or veterinary medicine. The program is administered under a cooperative agreement between participating institutions and the NIH. Loans, plus accrued interest, are repayable over a 10-year period.

ELIGIBILITY REQUIREMENTS

Student applicants must be Cuban nationals; be enrolled or accepted for enrollment in eligible institutions as full-time students; be unable to receive support from sources within Cuba; and be in need of the requested assistance to pursue the full-time course of study.

C. Health Professions Educational Improvement

1. Institutional and Special Project Grants

NATURE AND PURPOSE

Institutional and special project grants are designed to improve the quality of educational programs in schools of medicine, dentistry, osteopathy, optometry, podiatry, pharmacy, and veterinary medicine, and to increase enrollments in these schools.

Institutional grants may be used for any purpose that each school judges will most effectively advance the quality of its educational program, with the exception of construction research (except for research on the educational process as it relates to the various health professions), research training, student assistance, patient care, and operation of teaching hospitals.

Special project grants may be made to assist an eligible school in carrying out a special project to accomplish one or any combination of the following purposes:

- To plan, develop, or establish new programs or modifications of existing programs of education in the respective health professions.
- To effect significant improvements in curriculums of health professions schools.
- To conduct research in the various fields related to education in the respective health professions.
- To develop training for new levels or types of health professions personnel.
- To assist a school which is in serious financial straits to meet the costs of operation or to meet accreditation requirements.
- To help a school meet the costs of planning experimental teaching facilities or experimental design thereof.
- To help to increase the supply of adequately trained personnel in the respective health professions.
- To otherwise strengthen, improve, or expand programs to train the personnel in such professions.

ELIGIBILITY REQUIREMENTS

Any accredited school of medicine, dentistry, optometry, podiatry, osteopathy, pharmacy, or veterinary medicine (or with reasonable assurance of accreditation) may apply for support under either program.

2. Schools of Public Health

NATURE AND PURPOSE

Grants are awarded to schools of public health to support the provision of comprehensive professional training in the fields of public health and the administration of State or local public health programs.

ELIGIBILITY REQUIREMENTS

Accredited schools of public health are eligible to apply.

3. Graduate Training in Public Health

NATURE AND PURPOSE

Project grants for graduate training in public health provide funds to institutions with graduate or specialized training in public health for the purpose of expanding or strengthening such training programs.

ELIGIBILITY REQUIREMENTS

Schools of public health and other appropriate institutions providing graduate or specialized training in public health are eligible to apply.

4. Continuing Dental Education

NATURE AND PURPOSE

Continuing dental education grants are awarded to assist schools of dentistry and other eligible institutions to establish, expand, and improve organized programs of continuing professional education that will provide the widest possible choice of courses in the science and technology of dentistry, presented in as many decentralized locations as will ensure the maximum participation of the Nation's dental practitioners.

The goals of the program are to increase the attendance of dental practitioners in off-campus continuing dental education programs, and to provide a broad range of continuing education courses (variety and depth) in off-campus settings.

ELIGIBILITY REQUIREMENTS

Eligibility is restricted to recognized schools of dentistry, extension schools or departments of universities and colleges, and teaching hospitals.

5. Dental Auxiliary Utilization Program

NATURE AND PURPOSE

Undergraduate training grants are awarded under this program to assist schools of dentistry in the United States, its territories and possessions, to establish, continue, or expand programs for teaching dental students the proper and effective use of trained dental auxiliaries.

ELIGIBILITY REQUIREMENTS

Schools of dentistry are eligible to compete for grant funds.

6. Allied Health Professions Grants

NATURE AND PURPOSE

Under the Allied Health Professions Personnel Training Act, grants are made to improve the educational quality of the schools and increase the opportunities for training in allied health professions, such as medical technology, dietetics, physical therapy, occupational therapy, and radiologic technology.

Basic Improvement Grants are awarded to increase the opportunity for training and to improve the educational programs that prepare students in medical technology, optometric technology, dental hygiene, and other allied

health professions designated as eligible for support. Grants are made on a formula basis depending on the number of eligible curriculums and the number of full-time students receiving training in these curriculums.

Similar programs are supported by *Special Improvement* (project) Grants.

Grants for Development of New Methods provide for the development, demonstration, or evaluation of new types or new methods for training existing types of health technologists or technicians.

ELIGIBILITY REQUIREMENTS

To be eligible, a junior college, college, or university must qualify as a "training center for allied health professions." Criteria for a "training center" are:

- The institution offers programs of training in one or more of the following allied health curriculums:

Baccalaureate or Higher Degree—Dental hygienist, dietitian, medical record librarian, medical technologist, occupational therapist, optometric technologist, physical therapist, radiologic technologist, or sanitarian.

Associate Degree or Equivalent Degree—Dental assistant, dental hygienist, dental laboratory technician, dietary technician, inhalation therapy technician, medical laboratory technician, medical record technician, occupational therapy assistant, ophthalmic assistant, optometric technician, sanitarian technician, or x-ray technician.

- The institution has a minimum of 20 full-time students enrolled in the eligible curriculums, and no less than six students in any one curriculum.
- The institution has as one of its components a teaching hospital which provides clinical training required for completion of the training, or is affiliated with one or more such hospitals by an agreement which provides effective coordination of academic and clinical components of these curriculums and their supervision by the faculty of the "training center."
- The institution or its affiliated college or university is accredited by a recognized body or bodies approved for such purposes by the U.S. Commissioner of Education, Office of Education, or is a junior college accredited by its regional accrediting agency, or provides satisfactory assurance that reasonable progress is being made toward accreditation.

7. Improvement of Nurse Training

NATURE AND PURPOSE

Special project grants may be awarded to improve the quality of training offered by existing nursing education programs, and also for such additional purposes as research in nursing education; planning or establishing new programs of nursing education; helping nursing schools to meet operating costs, attain accreditation, or maintain accredited status; and helping agencies and organizations in their undertakings to increase the supply of adequately trained nursing personnel.

ELIGIBILITY REQUIREMENTS

Appropriate agencies, organizations, and institutions and all types of nursing education programs are eligible to apply for special project grants as authorized by the Health Manpower Act of 1968.

D. Medical Library

1. Grants

NATURE AND PURPOSE

Section 394 of the Medical Library Assistance Act, "Grants for Training in Medical Library Sciences," authorizes grants to individuals and institutions to support training for careers of service and research in health science librarianship and other health communications specialties.

Training grants are awarded to institutions to help support postbaccalaureate training programs designed to provide training for research and service in medical librarianship and other health science information specialties. Grants provide for stipends, tuition, materials, and compensation for professional and other staff who contribute substantially to the training program. Applications for training grants must be submitted at least 1 year in advance of the proposed activation date.

ELIGIBILITY REQUIREMENTS

Institutions of higher education, medical libraries, and related scientific communication instrumentalities having the available faculty and facilities to provide the necessary training are eligible to apply.

2. Fellowships

NATURE AND PURPOSE

Fellowships are awarded at the postdoctoral and special level to individuals interested in pursuing training in research to prepare them for research careers in the health information specialties. Prior to application for a fellowship, individuals must make arrangements with a sponsor who will provide curriculum guidance and an eligible institution which will provide a program of instruction. Fellowship awards are usually made for a period of not less than 1 year or more than 3 years.

Although there are no deadlines for submitting fellowship applications, individuals should apply at least 8 months in advance of the requested beginning date.

ELIGIBILITY REQUIREMENTS

Applicants for research fellowships must be citizens or noncitizen nationals of the United States, or have been lawfully admitted to the United States for permanent residence.

Postdoctoral fellowships are awarded to individuals who at the beginning date of the proposed fellowship have a Ph.D., M.D., D.D.S., D.V.M., Sc.D., D. Eng., D.O., or equivalent domestic or foreign degree.

Special fellowship applicants must have either a doctorate or equivalent degree and at least 3 subsequent years of relevant research or have otherwise demonstrated to the NIH sufficient competence in their field to pursue the proposed training program.

III. Resources

A. Research

1. General Research Support

NATURE AND PURPOSE

General research support grants are awarded to health professional schools of medicine, dentistry, osteopathy, public health, pharmacy, and veterinary medicine, and to hospitals, nonacademic research organizations, and state or local health departments.

The *General Research Support* program provides flexible and general purpose funds to eligible institutions within the United States for research and research training in the science areas related to health. These awards are intended to complement other forms of grants-in-aid and are made to encourage and enable the institution to meet emerging opportunities in research, to explore new and unorthodox ideas, to recognize and support scientific talent at an early stage and, in general, to utilize funds flexibly in ways that will improve and foster additional health capabilities consistent with the institution's broad academic objectives.

A similar program was created in 1966 for academic institutions other than health professional schools. Called the *Biomedical Sciences Support* program, these grants are also intended to complement other forms of grants-in-aid. General research support and biomedical sciences support also provide institutions with flexible funds to take advantage of unprecedented opportunities for cultivating scientific excellence and for building present and long-range institutional strength for health-related research and research training.

The *Health Sciences Advancement Award* program is designed to advance graduate academic institutions to new levels of achievement in their health science activities. Awards are made to applicant institutions that offer the greatest promise for advancing to superior levels of health science activities.

Following are some of the ways in which general research support grants may benefit institutions:

- Support of resources such as the operation of central research resources not related solely to any one specific project or program, but essential to the entire health research activity of the institution; or the provision of ancillary research services, such as machine shops or central laboratories;
- support of personnel for staff members engaged in research and re-

search training whose salaries would otherwise be dependent on individual research grants or less stable sources; and

- support of research that requires further exploration and development prior to more formal consideration for project support and by payment of unexpected expenses in an established project.

ELIGIBILITY REQUIREMENTS

Institutions applying for general research support must have been awarded a minimum of \$100,000 in appropriate research project grants during the preceding fiscal year. Other criteria, including the total health sciences research activities of the institution, the complexity of the various projects and programs being conducted, and the problems of integrating these programs, are taken into account.

The applicant institution for biomedical sciences support must have received a minimum of \$200,000 in appropriate research project grants during the preceding fiscal year. Other judgmental criteria similar to those used in the *General Research Support* program are also employed.

Health sciences advancement awards must be consonant with the grantee institution's advancement plans, and the institution must continue the supported program beyond the 5-year grant period. These awards are provided for a period not to exceed 5 years.

2. Clinical Research Center Grants

NATURE AND PURPOSE

Grants awarded through this program may be used to remodel and establish a research center, to supply modern equipment, and support special laboratories, diet kitchens, salaries for highly trained staff, and hospitalization costs for research patients. Thus, grants help to provide an ideal setting for the conduct of clinical research by providing nurses, dietitians, laboratory technicians and other professional staff. The majority of investigators using the facility receive salary support and individual research support from other sources.

A general clinical research center is a discrete ward of 4 to 40 beds set off from general care wards. Each unit has its own paramedical staff, laboratories, and diet kitchen. Unlike a categorical research center in which studies are focused on one disease such as cancer, or in one broad area such as aging, a general clinical research center may include studies on a variety of human diseases over a wide range of basic and clinical problems.

General clinical research centers are situated in hospitals where scientists from many departments correlate their laboratory studies with carefully controlled clinical observations and analyses. Projects of investigators proposing to use a center are reviewed for scientific merit by an institutional advisory committee and also by a special committee responsible for compliance with Federal policy on the rights of human beings as research subjects.

ELIGIBILITY REQUIREMENTS

Medical schools, medical school affiliated hospitals, and other nonprofit medical institutions capable of conducting well-designed studies involving human patients are eligible to apply.

3. Animal Resources

NATURE AND PURPOSE

The *Animal Resources* program was established to assist research institutions to meet their needs for higher quality specialized research animals, improved care of animals, and better definition of animals as biomedical models.

Grants are made to support the following activities:

- Developing and maintaining colonies of special research animals.
- Developing and defining new animal biological models.
- Developing and improving institutional animal resources, including those assuming a regional responsibility.
- Developing and maintaining laboratory animal disease diagnostic laboratories.
- Investigations for improving health and well-being of research animals including environmental technology.
- Projects for gathering and disseminating information on research animals, laboratory animal medicine, and technology.
- Postdoctoral training in laboratory animal medicine.
- Postdoctoral and special fellowships for specialized studies in laboratory animal science and medicine.

ELIGIBILITY REQUIREMENTS

Institutions engaged in health-related research who wish to undertake an animal resource project may apply. Grants are made to support a resource for an institution or major division within an institution. An institution may elect to provide an animal resource activity for several cooperating institutions in its region.

4. Special Research Resources

NATURE AND PURPOSE

Special research resource grants provide support for specialized services required by institutions for research in medical and related sciences. These services include computing and data processing, large scale preparation of biological materials, mass spectrometry and nuclear magnetic resonance, and other specialized analytical biochemistry techniques. Special grants are awarded for large scale resources, such as computers, that are to be made available to investigators in an entire institution or region. The program does not provide for research or training that can be obtained through the research and training grant programs of the National Institutes of Health.

ELIGIBILITY REQUIREMENTS

Universities, hospitals, and other institutions with programs of biomedical research and specialized research services that meet not only a clearly defined institutional need, but which will become an integral part of the general plan of development of the applicant institution, are eligible to apply.

B. Medical Library

1. Resource Grants for Health Libraries

NATURE AND PURPOSE

Section 397 of the Medical Library Assistance Act, "Grants for Improving and Expanding the Basic Resources of Medical Libraries and Related Instrumentalities," authorizes grants to purchase library and related resources to improve and expand the information services of health libraries. Appropriate uses of grant funds include: acquisition of books, journals, photographs, motion picture and other films, and other similar materials; cataloging, binding, and other services and procedures to process and maintain information materials; acquisition of duplication devices, facsimile equipment, film projectors, recording equipment, and other equipment to facilitate the use of the resources of the library or related instrumentalities; support for staff assistance and introduction of new technology in health communications and medical librarianship.

Medical library resource grants are intended to provide support for a total of 5 years, depending upon the availability of the necessary funds. Under law, the first year grant may not exceed a predetermined proportion of the annual operating budget of the library for which support is sought. For each succeeding grant year, the amount awarded is a fixed percentage of the previous year's grant. First year awards average 25 percent or less of the annual operating budget.

ELIGIBILITY REQUIREMENTS

Medical and other health libraries, and related scientific communication instrumentalities are eligible to apply.

2. Regional Medical Library Program

NATURE AND PURPOSE

Section 398 of the Medical Library Assistance Act, "Grants for Establishment of Regional Medical Libraries," provides funds to encourage and support the development of cooperative health library programs to help improve access to superior health information services for health professionals who are remote from library resource centers and to improve speed and ease of access to health information services for all users within a designated region while avoiding costly duplication of extensive or specialized collections.

Regional medical library grants are awarded to existing medical libraries to enable each of them to serve as the regional medical library for the geographical area in which it is located. Appropriate uses of grant funds include: acquisition of books, journals and other similar materials; acquisition of staff to implement the regional service program; cataloging and binding, and other library processing and maintenance; acquisition of necessary equipment and devices; and construction, renovation, rehabilitation or expansion of physical plants considered necessary to carry out the regional library functions. Regional health library services are intended to be services in addition to those already provided by the health libraries within the region; funds from regional medical library grants may be utilized only for purposes related to the implementation of the regional library plan. It is intended that the regional medical library grant program will utilize and build upon existing institutions. Priority will be given to medical libraries having the greatest potential for providing regional services in geographic regions with a demonstrated need for improved health science communication services.

The established regions and the regional medical libraries which serve them are:

<i>Region, Institution and Address</i>	<i>Service Area</i>
New England Regional Medical Library: Countway Library, Harvard University 25 Shattuck Street Boston, Massachusetts 02115	Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island
New York Regional Medical Library: New York Academy of Medicine 2 East 103rd Street New York, New York 10029	New York, Northern half of New Jersey
Mid-East Regional Medical Library: College of Physicians of Philadelphia 19 South 22nd Street Philadelphia, Pennsylvania 19103	Pennsylvania, Delaware, Southern half of New Jersey
Southeast Regional Medical Library: Medical Library, Emory University Atlanta, Georgia 30322	Alabama, Florida, Georgia, Mississippi, South Carolina, Tennessee, Commonwealth of Puerto Rico

East Central Regional Medical Kentucky, Michigan, Ohio
Library:
Medical Library, Wayne State
University
645 Mullett
Detroit, Michigan 48226

Midwest Regional Medical Library: Illinois, Indiana, Iowa
The John Crerar Library Wisconsin, Minnesota
35 West 33rd Street
Chicago, Illinois 60616

Pacific Southwest Regional Medical California, Arizona, Hawaii, Nevada
Library:
Medical Library, U.C.L.A.
Biomedical Library, Center for the
Health Sciences
Los Angeles, California 90024

Pacific Northwest Regional Medical Washington, Oregon, Idaho,
Library: Montana, Alaska
Medical Library, University of
Washington
Seattle, Washington 98105

The National Library of Medicine, 8600 Rockville Pike, Bethesda,
Maryland 20014, serves as the Regional Library for Maryland, Virginia,
West Virginia, North Carolina, and Washington, D.C.

ELIGIBILITY REQUIREMENTS

Any appropriate institution located in a State is eligible to apply for a regional medical library grant.

3. Biomedical Publications Grants

NATURE AND PURPOSE

Section 399 of the Medical Library Assistance Act, "Financial Support of Biomedical Scientific Publications," authorizes grants and contracts to support nonprofit biomedical scientific publications and to procure the compilation, writing, editing, and publication of secondary information tools such as reviews, abstracts, translations, indices, handbooks, bibliographies, and related matter pertaining to scientific work and scientific developments.

Publication grants assist the selective funding of necessary costs of preparing and publishing secondary information resources which condense, synthesize, evaluate and repackage information for U.S. health practitioners, educators and scientists.

ELIGIBILITY REQUIREMENTS

Institutions of higher education and individual scientists are eligible to apply.

IV. Facilities

A. Health Research Facilities

NATURE AND PURPOSE

Grants for the construction of health research facilities are made to universities and other eligible institutions on a matching basis, with the Federal share not exceeding 50 percent of necessary construction costs. The purpose of the program is to help meet deficiencies created by obsolescence and expanding research needs through funds for construction, remodeling, or equipping health research facilities.

ELIGIBILITY REQUIREMENTS

Any university or institution competent to engage in research in the sciences related to health may apply.

B. Health Professions Education Facilities

NATURE AND PURPOSE

To meet expanding health needs and the continuing shortage of trained health personnel, the National Institutes of Health provides matched construction grants—usually no more than 66⅔ percent of the total construction costs—to institutions concerned with educating health personnel.

The purpose of the program is to assist in the construction of new and improved health educational facilities that will advance the quality of health education and increase student enrollment in the health education professions.

There are three types of educational construction grants:

- Health Professions Education Facilities grants for construction or remodeling of educational facilities to permit increased enrollment in the health professions schools.
- Nurse Education Facilities grants for building or remodeling nurse education facilities to increase nurse enrollment and improve training.
- Allied Health Education Facilities grants for construction of new and improved teaching facilities to expand the numbers of allied health professions personnel.

ELIGIBILITY REQUIREMENTS

Health education schools, affiliated teaching hospitals, and colleges with professional or technical health training programs are eligible to apply for

construction grants. All schools must be accredited or reasonably assured of accreditation.

C. Medical Library Construction Grants

NATURE AND PURPOSE

Federal matched grants for library construction, renovation, and/or equipment are made by the National Institutes of Health to eligible institutions in an attempt to meet expanding needs for better health information services.

Medical library construction grants provide for the construction or improvement of medical library facilities.

ELIGIBILITY REQUIREMENTS

Any institution offering library services in the health-related sciences is eligible to apply.

Appendix A

BIOMEDICAL RESEARCH AREAS SUPPORTED BY THE NATIONAL INSTITUTES OF HEALTH

THE NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES supports a worldwide program of research on the causes, diagnosis, treatment, and prevention of allergic and infectious diseases. The Institute also supports basic research on viruses, bacteria, parasites, and other microorganisms that cause disease in man, as well as research on the body's immunological defenses against disease. The Institute is particularly interested in encouraging research on problems of national health importance such as infectious hepatitis, allergic and immunologic diseases, transplantation immunology, chronic and degenerative diseases of microbial origin, streptococcal infections and their sequelae and drug resistant bacteria. The Institute also supports training for careers in research and academic medicine in the fields of allergy, immunology, acute and chronic infectious diseases, and tropical medicine; and in allied areas of cell biology, virology, mycology, bacteriology, parasitology, rickettsiology, epidemiology, clinical pharmacology, and genetics.

THE NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES supports research into the causes, prevention, diagnosis, and treatment of the various arthritides, the rheumatic and collagen diseases, and the metabolic diseases, such as diabetes; other inborn errors of metabolism, such as cystic fibrosis; gastroenterology, orthopedics, dermatology, hematology, nutrition endocrine disorders, energy and mineral metabolism, urology and kidney diseases and development of the artificial kidney machine. The program includes basic research in biochemistry, enzymology, nutrition, pathology, histochemistry, chemistry, pharmacology, toxicology, and physical, chemical and molecular biology. The Institute also supports training programs, primarily to provide research experience and advanced clinical training, where relevant to the research experience, for individuals who wish to pursue academic careers in the areas of arthritis, dermatology, diabetes, endocrinology, gastroenterology, including liver diseases, hematology, metabolism, nutrition, orthopedics, urology, and kidney diseases.

THE NATIONAL CANCER INSTITUTE supports programs for research on cancer cause and prevention, diagnosis, and treatment. These activities include virtually every investigative approach to the cancer problem, in such fields as biochemistry, biology, radiation physics, chemotherapy, epidemiology, endocrinology, immunology, physiology, and clinical medicine, surgery, and radiotherapy. Research progress has delineated three areas of currently intensive study: viruses as a possible cause of leukemia and other forms of human cancer, drug treatment of cancer, and cancer-causing chemicals in the environment.

The NCI supports a number of Specialized Research Centers which are performing intensive, highly specialized clinical research or laboratory research relating to cancer in man. These centers are organized on a single or multidiscipline basis to assist each other in developing new methods of diagnosis and treatment. A Cooperative Clinical Program of the Institute encompasses approximately 20 groups of investigators conducting research on all therapeutic modalities, closely related preclinical projects and, to a lesser but increasing extent, epidemiology and diagnosis. In addition, the NCI supports fundamental and clinical research training in the medical disciplines that can be applied to problems in cancer; special emphasis has been placed on training radiation therapists and radiation biologists since these specialists have contributed to an increasing degree of improvement or cure among patients with cancer. The NCI also supports a clinical cancer training program to increase the quality of cancer instruction at one or more professional levels.

THE NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT provides funds for research grants to qualified scientists working in areas related to maternal health, child health, human growth and development, maturation and the aging process; also in reproductive biology, embryogenesis, perinatal biology, and causes of infant and fetal mortality. Special emphasis is placed on population research and studies in mental retardation. The Institute also supports training programs primarily to provide research experience for individuals wishing to pursue academic careers in the areas of maternal and child health, growth and development, maturation and the aging process, reproductive and perinatal biology, mental retardation and population problems. Emphasis is placed on training in the social and behavioral sciences as well as in the biomedical sciences.

THE NATIONAL INSTITUTE OF DENTAL RESEARCH supports investigations into the causes, means of prevention, diagnosis and treatment of oral diseases including dental caries, periodontal disorders, lesions of soft and hard tissues, and oral-facial abnormalities such as cleft lip and palate. The goal of another important interest, biomaterials research, is to develop new and improved dental and cranio-facial prostheses. Studies range from basic and epidemiologic research to clinical trials and applications. The Institute also provides support in establishing or improving graduate training, primarily for research, but which may also include teaching experience. Training may be either in the nonclinical, health-related sciences or in an area which combines the clinical and basic sciences related to dentistry.

THE NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES supports fundamental research concerned with defining, quantifying, and understanding the effects of chemical, biological, and physical factors upon biological systems in relation to the health and well-being of man. The Institute's program interests encompass the epidemiology of environmental hazards and

the development and utilization of experimental models that duplicate the circumstances of human exposure. Among factors considered are the mode of entry of noxious agents; the effects of concomitant or sequential exposure to multiple agents; the short- and long-term biological, morphological, and functional effects upon biological systems; and the condition of the host. The Institute also supports research training to increase the number and quality of research scientists involved in fundamental studies of the effects of environmental agents upon biological systems in relation to the health and well-being of man. Support may be provided to any area of a wide spectrum of the physical and biological sciences including biochemistry, biology, biometry, chemistry, clinical medicine, human ecology, engineering, epidemiology, pathology, pharmacology, physics, physiology, radiobiology, toxicology, and veterinary science. In addition to high-quality and intensive training in the discipline(s) involved, programs requesting support must emphasize both the acquisition of existing knowledge and active research concerned with the development of new knowledge about environmental health problems.

THE NATIONAL EYE INSTITUTE supports research on the causes, prevention, and treatment of disorders of the eye and the visual system. Its primary interests include fundamental studies of the eye and its adnexae, the optic nerve, optic tract, optic radiation, visual cortex, and associated portions of the central nervous system (sensory and motor), and the events occurring between the impingement of light on the retina and the conscious perception of an image; research on the natural history, etiology, pathogenesis and pathology, diagnosis, and treatment of visual disorders; and research on rehabilitation of the visually handicapped. The Institute also provides support for the establishment, expansion, and improvement of graduate training in the basic and clinical sciences relating to vision and its disorders. The purpose of the Institute's training programs is to provide research experience and advanced clinical training for individuals who wish to pursue careers in research and teaching in the visual sciences.

THE NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES supports research in the sciences basic to medicine, in the behavioral sciences, and in certain clinical disciplines. Among the major objectives are to gain new knowledge for safer and more effective use of drugs; to improve diagnostic methods and services, especially by automating clinical laboratory processes; to solve problems in the therapy of trauma; to improve the administration of anesthesia and the clinical management of pain; and to achieve a greater understanding of genetic mechanisms, and of the structure and function of cells, including their substructures. Specific research fields of interest to the Institute are anesthesiology, the behavioral sciences in relation to disease, biochemistry, biomedical engineering, biophysics, cellular biology, clinical chemistry, diagnostic radiology, genetics and genetic chemistry, molecular biology, pharmacology and toxicology. The Institute also supports research

training programs in basic biomedical sciences, behavioral sciences, and certain clinical disciplines, specifically those mentioned above. These programs serve to provide highly trained scientists, who will be able to develop new biomedical knowledge, and to translate advances in basic research into useful clinical application. The Institute also supports training programs to increase the number and the skills of practicing anesthesiologists, and encourages training programs in new and rapidly developing biomedical disciplines.

THE NATIONAL HEART AND LUNG INSTITUTE supports basic and clinical research on the structure and function of the cardiovascular system and on the prevention, diagnosis, and treatment of the diseases that afflict it. Major areas of research include: atherosclerosis; coronary heart disease; peripheral vascular disease; cerebrovascular disease; hypertension; renal physiology and kidney disease; thrombosis and hemorrhagic diseases; heart failure and shock; congenital and rheumatic heart disease; cardiovascular dynamics and circulatory regulation; cardiopulmonary physiology and diseases; and connective tissue and collagen diseases. The Institute also supports a graduate training program to assist and extend the training of individuals preparing for research and academic careers in fundamental, preclinical, clinical, public health, and other disciplines related to the cardiovascular diseases. Through clinical training grants awarded to universities, the Institute supports specialized training in the most advanced clinical techniques for physicians in such selected cardiovascular specialties as hematology, cardiovascular anesthesiology, and nephrology. Undergraduate training is also supported to introduce students of medicine and osteopathy to cardiovascular problems and to stimulate their interest in cardiovascular research.

NATIONAL INSTITUTE OF NEUROLOGICAL DISEASES AND STROKE research project and clinical research center programs stimulate and support investigations in the neurological, sensory, communicative, and related fields, including research concerned with the cause, development, diagnosis, therapy, and prevention of such disorders as: multiple sclerosis, cerebrovascular diseases, epilepsy, muscular dystrophy, head and spinal cord injury, cerebral palsy, mental retardation, encephalitides, Meniere's syndrome, aphasia, nerve deafness, otosclerosis, and other disorders of the nervous system, hearing equilibrium, and speech. In addition, support is provided for fundamental studies of the development, structure, and function of the nervous system, the neuromuscular apparatus and human communication. The Institute also supports training programs, preparing personnel for careers in the neurological and communicative fields, specifically programs concerned with the cause, development, diagnosis, therapy, and prevention of disorders such as those mentioned above. In addition, training programs are supported on the development, structure and function of the nervous system, the neuromuscular apparatus and human communication.

THE NATIONAL LIBRARY OF MEDICINE supports projects for research and development in medical library science; information-seeking behavior, information source preferences of health science workers; and creation, development, or application of information processing tools and technology. Support is also provided for careers in medical librarianship and other health communications fields and specialties, for individual special scientific projects and for selected biomedical writing and publication projects.

THE DIVISION OF DENTAL HEALTH, Bureau of Health Professions Education and Manpower Training, supports research to increase the supply and improve the education and utilization of the Nation's dental manpower, to develop and improve the utilization of the dental services and resources of the country, to prevent and control dental diseases and disorders, to organize and operate dental care programs for specifically designated population groups, and to promote and extend provisions of dental services. The Division also supports training programs designed to increase the number and proficiency of individuals capable of conducting research in the fields of dental education, epidemiology, clinical testing of materials and pharmaceutical agents, dental care delivery systems, oral hygiene education, and other applied areas relevant to dental manpower and the total dental care delivery system. Individual fellowships are supported to augment these programs and to complement them with trainees in special fields having a utility in dental health research, but in which the need for large numbers of individuals is not as great.

THE DIVISION OF NURSING, Bureau of Health Professions Education and Manpower Training, supports research to improve the nursing care of patients and increase the nursing contribution to health services. Its research projects reach into all areas of nursing education and practice and include study of problems of clinical practice, career choices, organization and delivery of nursing services, nursing as an occupation, identification of new scientific knowledge to improve the care and comfort of patients, and ways to further research application and thus ensure the therapeutic consequence of nursing actions. The Division also supports research training programs, primarily to encourage nurses to train for research careers in nursing, to collaborate in interdisciplinary research, and to stimulate and to direct nursing research. Support is given to biomedical and behavioral research training which can be applied to problems of importance to nursing. Training is supported in the scientific disciplines of anatomy, anthropology, biology, epidemiology, microbiology, physiology, psychology, and sociology; and in such health-related fields as biometry, biomedical communications, health organization, health economics and human development.

THE DIVISION OF RESEARCH RESOURCES, Bureau of Health Professions Education and Manpower Training, administers and manages broad programs

intended to supply a wide institutional base of support for health-related research. The Division's principal concern is to help establish and operate a number of general clinical research centers where clinical research studies can be conducted over a wide range of human diseases; supply highly specialized research services and equipment; increase the availability of laboratory animals, including unusual species and special strains; support regional primate research centers; and stimulate well-balanced institutional research programs through grants for general research support. The Division also provides funds on a continuing basis through general research support to health professional schools of medicine, dentistry, osteopathy, public health, pharmacy, and veterinary medicine, and to other nonprofit organizations engaged in health-related research for research training in the health sciences.

In addition, the Division supports special training programs and postdoctoral fellowships in laboratory animal science and medicine.

THE DIVISION OF EDUCATIONAL AND RESEARCH FACILITIES, Bureau of Health Professions Education and Manpower Training, through increasing laboratory space for health-related research, permits expanded research programs and makes possible the training of research workers in the health sciences. The Division also provides matched grants to institutions to assist in the construction of facilities for the conduct of health-related research.

THE DIVISION OF PHYSICIAN MANPOWER administers programs to encourage and support research that proposes to develop, refine, test, and apply methods for increasing the supply, improving the quality, and enhancing the effectiveness, distribution and productivity of medical and osteopathic manpower in relation to requirements for education and training.

Appendix B

WHERE TO WRITE FOR MORE DETAILED INFORMATION AND APPLICATION FORMS:

All in care of the National Institutes of Health, Public Health Service, Bethesda, Maryland 20014

<i>Program</i>	<i>Address</i>
Advanced Traineeships -----	Division of Allied Health Manpower, Bureau of Health Professions Education and Manpower Training
Allied Health Education Facilities Grants -----	Division of Education and Research Facilities, BEMT
Animal Resources Grants -----	Division of Research Resources, BEMT
Basic Improvement Grants -----	Division of Allied Health Manpower, BEMT
Biomedical Publication Grants -----	National Library of Medicine
Construction Grants -----	Division of Educational and Research Facilities, BEMT
Continuing Dental Education Grants -----	Continuing Education Branch, Dental Health Center, Division of Dental Health, BEMT
Cuban Refugee Program -----	Student Loan and Scholarship Branch, Division of Manpower Educa- tional Services, BEMT
Dental Auxiliary Utilization Grants -----	Division of Dental Health, BEMT
Development of New Methods -----	Division of Allied Health Manpower, BEMT
Fellowships (Dental Health) -----	Division of Dental Health, BEMT
Fellowships (Medical Library Sciences) -----	National Library of Medicine
Fellowships (Nursing Research) -----	Division of Nursing, BEMT
Fellowships (Research) -----	Career Development Review Branch, Division of Research Grants

Grant support is also available from the Health Services and Mental Health Administration, the Environmental Health Service, and the Food and Drug Administration of the Public Health Service through programs for research, training, demonstration, construction, and planning. Information can be obtained from:

Office of Information
Health Services and Mental Health
Administration
Public Health Service
Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20852

Office of Public Affairs
Environmental Health Service
Public Health Service
Federal Building 8
200 C Street, S.W.
Washington, D.C. 20204

Food and Drug Administration
Public Health Service
Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20852

